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University of Waterloo

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A Brief to the Committee on University Affairs

This submission of the University of Waterloo to the
Committee on University Affairs is intended to indicate several
subjects that may be a basis for ongoing discussions
when representatives of the Committee meet the Commission.

UNIVERSITY OF WATERLOO

BRIEF TO

THE COMMITTEE ON

UNIVERSITY AFFAIRS

- A. The development and maintenance of
graduate programs.
- B. Research Funding
- C. Budgeting: work done, results of
budgetary period.
- D. The funding of church related colleges,
independent and affiliated with the university.

NOVEMBER, 1972

(See Table of Appendices at page 11 for details of the material submitted for information)

This submission of the University of Waterloo to the Committee on University Affairs is intended to indicate several subjects that concern the University at this time. They may, if the Committee so desires, be a basis for opening discussions when representatives of the University meet the Committee.

The following themes are briefly introduced:

- A. The development and maintenance of graduate programmes.
- B. Research Funding.
- C. Budgeting: work units, length of budgetary period.
- D. The funding of church related colleges, federated and affiliated with the university.

(The Table of Appendices at page 11 indicates the nature of the material submitted for information)

A. THE DEVELOPMENT AND MAINTENANCE OF GRADUATE PROGRAMMES

One of the major concerns of the University over the past year has been with the developments in the area of graduate studies. The imposition of the embargo on new graduate programs in March of 1971, and the launching of the planning assessments program under A.C.A.P., have posed several problems with which the universities have had to cope.

1) Effect of the Embargo:

We appreciate the particular concern of the province to control the growth of graduate programs because of their high cost. We accept therefore that there was a need to establish an embargo on new programs in certain disciplines until the planning assessments are completed and the recommendations from them are available to give guidance for future development. We object, however, to including in the definition of new programs those which were already either favourably appraised or active before the Appraisal Committee in March 1971. The universities had already developed the faculty, library and other resources required to mount such programs in preparation for the appraisal. They had proceeded with this investment of resources in good faith and then found that the "rules of the game" had been changed. They now had the alternative of maintaining this investment of resources in these programs pending the outcome of the planning assessments or abandoning their plans. Since the latter course of action would be a total waste of the funds already spent to develop the programs, we have decided to maintain the programs that fall in this category. In some cases the planning assessment will be completed in a reasonably short time but

in others the embargo interval may be as long as two or three years. We do not think that it is reasonable to maintain this situation and we urge the Committee to consider allowing programs in this category to be funded on a limited basis until the planning assessments are completed.

2) The Role of A.C.A.P.:

The Advisory Committee on Academic Planning, A.C.A.P., was established by the Ontario Council on Graduate Studies on the authorization of the Council of Ontario Universities in 1971, in recognition of the importance of providing for the continued and orderly development of graduate studies in the Ontario universities. While A.C.A.P. was given a number of functions, its primary concern since its establishment has been the carrying out of discipline assessments. In this task A.C.A.P. works closely with the discipline groups involved. This activity has generated a good deal of concern among the universities about the role of A.C.A.P. and about the effect of discipline assessments on the individual universities' graduate programs. Fears have been expressed in some quarters that some universities' programs, and indeed perhaps some entire departments, may be phased out of graduate work at the doctoral level.

This University does not share these fears. We recognize the need for planning at the provincial level in graduate studies. We further believe quite strongly that this planning should be carried out by the universities themselves and not by government. We view A.C.A.P. as the instrument which the universities have established to assist them individually in this planning process. We believe further that A.C.A.P.'s primary role is the

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positive one of assisting the universities in the development of excellence in graduate programs rather than the negative role of being an instrument dedicated to the curtailment of graduate activity. The main thrust of the planning assessments must be to assist the universities to develop their graduate programs in such a manner as to make the most efficient use of the resources of manpower, equipment and facilities which they now have. Graduate education is costly and any developments which did not promote the effective utilization of resources in this area would be difficult to defend.

Some of the assessments may well come forward with recommendations that some universities curtail their activities in certain fields in which they lack the strength to develop a full graduate program, or that other universities not proceed with plans to develop new programs in certain areas, because these areas are adequately served by academically sound programs already in existence. But we also anticipate that some of the assessments will bring forward recommendations for the expansion of graduate activity in certain areas at certain universities where the resources are available, and for the development of new programs in fields of activity which are not now adequately covered in the Ontario system, and for which there is a need. We are confident that the Ontario universities will accept the responsibility for planning their future graduate development in a rational manner, and that the net result of this planning will be stronger graduate programs, and healthier universities.

3) Beyond Assessment:

One of the major problems which the universities collectively will face in this next year will be to develop a policy of response to the

results of the first planning assessments. The integrity of the entire assessment procedure will be at stake. At the same time the universities must have some reasonable assurance that the Committee on University Affairs and the Ministry will accept these assessments as a basis for system planning. Otherwise, the entire exercise becomes one of total futility and represents a colossal waste of time, energy and money.

The procedures for initiation of new graduate programs in the future have now been set down in the document prepared by C.U.A. and C.O.U. and approved by the Minister in July 1972. We accept this document as being approved government policy and will operate under its terms. We would hope that the need for ad hoc decisions in this area now no longer exists. We are prepared to accept our responsibilities for the rational development of graduate programs in the province but to be effective this development must take place in an atmosphere of confidence, confidence that there will be no ad hoc decisions which are clearly contrary to announced policies and that changes in policies will be made only after due process of consultation. Without this confidence the situation will rapidly become chaotic with serious consequences for the universities and the province.

B. RESEARCH FUNDING

Since its founding in 1958, the University of Waterloo, in common with several other Ontario universities, has built up a considerable research capacity. The funding has had its origin in large part from federal sources, part being dispersed directly through granting agencies, some dispersed directly to mission-oriented projects and other portions dispersed to the

provinces in educational cost-sharing arrangements. Provincial support through formula operating grants, Ontario Graduate Fellowships and Ontario mission-oriented projects has made up virtually the whole balance of research finding.

In this recent era few funds that have gone to research have been tied closely to a specified tightly defined goal. The federal government has been largely passive in this matter and the provincial government has not undertaken to coordinate the building of research capacity at universities.

The University of Waterloo has assembled teams of specialists in a number of areas of specialized research which are integrated with graduate instruction and at the same time engaged in "hard" innovative research. Regular operating income has served to seed some of these activities, but they are very largely dependent upon funds from granting agencies and from contract research. The Waterloo Research Institute is the University's medium for arranging and administering research contracts from industry and from government. Negotiated Development Grants from the National Research Council are an effective form of support for several research teams which require a scale of support beyond the means of the university through its normal operating budget.

At this time it is difficult for a university to formulate policies for the further development of research capacity, because both at the federal level and the provincial level, and in the realm of federal-provincial relationships, the accustomed processes of funding are under scrutiny, and subject to imminent alteration.

The preliminary report of the Ontario Commission on Post-Secondary Education suggests that future operating grants, tied to enrollments, are likely to be directed to "teaching" functions, implying that "research" will be funded in some other way, if at all. The federal government appears to be working on two themes, that are relevant here: a reworking of the structure and modus operandi of granting agencies; the shifting of emphasis from funding mission-oriented research in its own research establishments to other existent research locations, principally at universities. No matter what the policies developed at the two levels of government at this time, they are dependent upon the outcome of federal-provincial financial agreements, to be decided in 1974.

From a university point of view, there are several concerns that can be ameliorated in the course of rearranging the funding of research:

- a) Real excellence in research is a primary goal. The role of federal granting agencies in selecting excellence of quality in research for support must be strengthened. At the same time, means should be sought to allow the university a role in rationalizing the research activity on its campus with the same aim of enhancing quality, and effectiveness.
- b) There should be a known continuity of funding through a period of years to allow a university to develop its research capacity rationally. (The technique of the Negotiated Development Grant, with some modification, may be the best vehicle for this).
- c) The costs and resources that are connected with teaching, with disinterested curiosity-directed research, and with mission-oriented research are rightly intermingled in any effective university situation. Each activity gains and can be more cost efficient if left consolidated and not subdivided. The effectiveness of the consolidated activity is susceptible to various forms of appraisal entities that will satisfy the needs of funding authorities for audit and quality control.

- d) Because graduate students are clearly less expensive than technicians on a direct-cost basis as research personnel, the question of research funding impinges upon the number of graduate students "in stream" at universities. If, in some fields, it is perceived that the social needs of the province require fewer graduate students while still requiring a high volume of research activity, the two considerations should be uncoupled. Funding in these cases will, of necessity, recognize the enhanced cost due to employing full time technical personnel.
- e) The policies for funding research that emerge from the present discussions should ensure that curiosity-directed research continues to receive considerable support. This area of activity is peculiarly the responsibility of universities and over the long period of years, is the very life blood of the nation's scientific life.

The University of Waterloo is eager to build upon its present strengths and potential strengths in establishing a worthwhile centre of research in areas that conform to the national and provincial need. It is actively responding where possible, to the needs of industry through the agency of the Waterloo Research Institute. It is eager to refine its present research policies. It is willing to respond, if its advice is sought. Some guidelines are urgently needed if it is to use its present resources rightly, in the national interest, and if its further evolution is to be rational.

C. BUDGETING

1) Work Units:

The University understands the effort of planners to identify some generally applicable unit that will be useful in measuring teaching activity, in order to distribute operating costs equitably. Many definitions of an activity or work unit are possible. It is submitted, however, that teaching is a very complex activity, properly undertaken in many forms. To measure it in terms of a few variables such as hours of instruction, in three or four types of classes, would be too gross a measure. It would inevitably put pressure upon instructors to use class types that would maximize budgetary support, placing their emphasis on other than academic goals.

The methods of funding, even if constraining, should strive to apportion budgets in a manner that would allow instructors to devise their own "trade-offs" in seeking the most effective possible means of achieving academic goals.

2) Length of Budgetary Periods:

It will be recognized that in the last decade the budgeting procedures involved in financing Ontario Universities have presented Universities with major discontinuities in policy, or definitions or practice in virtually every succeeding year. Clearly, the decade witnessed a limited number of major changes in circumstances which necessitated a change in the sum of monies appropriated to the university system as a collectivity.

The experience of the decade, combined with the recent levelling of the rate of growth, suggests that it may now be possible to adjust the budgeting procedures in Ontario to smooth the perturbations caused by the less radical fluctuation of each year. In both Great Britain and Australia it has been possible to develop budgets for periods of five years. It is urged that means be sought to extend the present practice of presenting B.I.U. values one year in advance, and devise other ways of smoothing the budgeting procedures over time. Perhaps the place to start is in the frank exchange of information and prediction models between representatives of Ontario Treasury Board, M.C.U. and the community of Universities, having the intent of progressing from the present situation to two, three and perhaps four-year budgeting cycles.

D. THE FUNDING OF CHURCH RELATED COLLEGES, FEDERATED AND AFFILIATED WITH THE UNIVERSITY OF WATERLOO

On July 25th, 1972, a delegation from the University presented its situation in this connection to a Committee of C.U.A. This Brief does not wish to enlarge upon the presentation made at that time. This is simply to indicate that the University's concern about the subject continues.

APPENDICESTABLE OF ITEMS

- I Implementation of the University of Waterloo Act 1972.
- II Table: university teaching activity.
- III Innovative activities.

THE NEW UNIVERSITY OF WATERLOO ACT

On November 1, 1972 the University of Waterloo will begin to operate under a new University Act. This Act, which was passed by the provincial legislature in May, is a combination of six years of intensive study of all aspects of university government. In particular, this study in which all segments of the university community participated, included a detailed examination of a unicameral governing structure. After a good deal of discussion the unicameral form of government was rejected by the university in favour of a revised bicameral system.

The new Act differs from the old one in two major respects: Representation on the two senior governing bodies has been broadened to include members from all segments of the university community. Of the 36 members of the Board of Governors, 15 will be from within the university. There will be 7 members of faculty, 5 students and 2 members of the university's non-academic staff in addition to the President of the university. The faculty and student members of the Board of Governors will be elected by the Senate from among its members. The remaining 21 members will be members of the community-at-large.

The Senate of the university, since it is a supreme academic body, will consist of a majority of elected faculty. The students will elect 9 members to the Senate, 6 undergraduates and 3 graduates, the Alumni will elect 3 members, and there will be 3 members of the Board of Governors chosen from the community-at-large members of the Board elected to the Senate.

In addition to the elected members, there will be a number of ex-officio members of Senate which are chiefly the senior academic administrators of the university and of the federated and affiliated colleges.

The second important change in the new Act is the recognition that the Senate must become more actively involved in all matters relating to the development of university policy. In the traditional bicameral structure the jurisdiction of the Senate is limited to purely academic matters while the Board is concerned only with financial matters. In an effort to break down this usually artificial separation, the new Waterloo Act gives the Senate broader powers to advise the Board in financial and fiscal matters, as well as making decisions on academic matters. The presence on the Board of faculty and student members of Senate, and the presence on Senate of external community members of the Board, is also expected to contribute to a greater integration of the decision-making processes.

We believe that the University of Waterloo Act 1972 represents a significant step forward in the evolution of university government at the University of Waterloo, and that it will guide our deliberations well in the years ahead.

UNIVERSITY OF WATERLOO
DISTRIBUTION OF PROJECTED 72/73 TEACHING ACTIVITY

	UNDERGRADUATES	MASTERS	DOCTORALS	WEIGHTED TOTAL (1)
	%	%	%	%
Classics	0.5	-	-	0.3
Romance Languages	1.6	0.8	-	1.2
Economics	3.6	1.5	-	2.6
English	3.8	3.0	-	3.0
Fine Arts	1.3	-	-	0.8
Germanic & Slavic Languages & Literatures	1.7	1.8	3.1	2.0
History	3.1	5.7	-	2.9
Philosophy	2.5	1.5	7.9	3.4
Political Science	1.9	1.5	-	1.5
Psychology	8.5	9.2	11.2	9.1
Religious Studies	0.4	-	-	0.2
Sociology	3.1	1.5	0.9	2.5
Anthropology	1.9	-	-	1.3
Arts	0.4	-	-	0.3
	34.3	26.5	23.1	31.1
Chemical Engineering	1.7	6.5	7.5	3.4
Civil Engineering	3.0	6.9	7.6	4.4
Electrical Engineering	2.5	6.1	4.4	3.3
Management Science	0.1	4.4	3.1	1.2
Mechanical Engineering	4.2	6.4	6.0	4.9
Systems Design	1.0	2.3	2.2	1.4
General Engineering	2.8	-	-	1.9
	15.3	32.6	30.8	20.5
Architecture	1.6	-	-	1.1
Geography	3.7	4.3	1.9	3.5
Man-Environment Studies	1.2	-	-	0.8
Urban & Regional Planning	2.4	4.8	2.0	2.6
	8.9	9.1	3.9	8.0
Mathematics	20.7	15.7	21.1	20.1
Kinesiology	4.1	-	-	2.8
Recreation	1.2	-	-	0.8
	5.3	-	-	3.6
Biology	3.5	3.3	6.2	4.0
Chemistry	5.1	4.5	7.9	5.6
Earth Science	0.9	3.2	-	1.0
Optometry	1.1	0.2	-	0.8
Physics	4.7	4.9	7.0	5.2
Science	0.2	-	-	0.1
	15.5	16.1	21.1	16.7
	100.0	100.0	100.0	100.0

- (1) Weights of 1,2 and 4 respectively were applied to the projected numbers of full time equivalent undergraduates, masters and doctoral students to be taught within each discipline

CONCERNING INNOVATIONS IN CURRICULUM AND INSTRUCTIONAL METHODOLOGY AT THE UNIVERSITY OF WATERLOO

The following notes indicate some of the activities in this area that may be of interest to the Committee on University Affairs.

1. The Co-operative Programmes - (The form of programmes where students spend alternate four-month terms on campus in curricular activity, and off campus in curriculum related employment).

This form of programme continues to be well patronized at the University of Waterloo and may, from time to time, be extended to new fields of study, when it is perceived to be appropriate.

In Fall 1972, the following is the number of students in co-op programmes:

Engineering	2720
Pre-Professional Architecture	221
Professional Architecture	42
Mathematics	1057
Kinesiology	264
Recreation	178
Applied Physics	74
Applied Chemistry	<u>163</u>
TOTAL	4719

This represents approximately 43% of the undergraduates at the University of Waterloo.

It should be noted that this form of programme has not been attempted in all disciplines. It is the University's experience that the co-operative principle, properly applied, can be very efficient and effective. The method should not be promoted broadly throughout the Ontario system, however, as a means to achieve large budgetary economies. Further, it is our belief that relevant work experiences for students are not infinitely expansible, though to date we have achieved our objectives, even in a receding economy.

2. The Inter-Faculty Programme Board

A. Organization of the I.F.P.B.

To initiate and co-ordinate inter-faculty and interdisciplinary programmes and courses, the University of Waterloo established the Inter-Faculty Programme Board, with membership broadly representative of the Faculties, Divisions and Colleges of the University. The objectives of the Board are:

- 1) to sponsor individual interdisciplinary courses,
- 2) to facilitate the development and introduction of interdisciplinary thematic programmes leading to bachelor degrees,
- 3) to facilitate or sponsor certain non-specialist or "service" courses that Faculties may require for students in their programmes,
- 4) to sponsor guest lectures, colloquia, and seminars from time to time.

Since its establishment, the Inter-Faculty Programme Board has facilitated the offering of eight individual courses, and a thematic degree programme in Communication Studies.

B. Communication Studies Programme

Under the auspices of the Inter-Faculty Programme Board, the Faculty of Arts, the Faculty of Engineering and the Faculty of Environmental Studies, the Communication Studies Programme will permit students in general degree programmes to qualify for a "major" in communication, beginning September '72.

The programme consists of a set of four core courses and three theme areas, each consisting of several courses.

The three theme areas are:

- i) Mass Media Systems
- ii) Communication and Environmental Studies
- iii) Communication Systems Design.

C. WOTASP

The student-initiated "Workshops on Technological and Social Problems" provide students with an opportunity to study contemporary issues confronting society. The multidisciplinary workshops are student-initiated, planned and directed. University faculty serve as resource persons and provide periodic consultation and final evaluation.

3. Integrated Studies

Integrated Studies, introduced in 1969, provides an unstructured learning environment for students possessing a strong aptitude

for self-direction and independent study. Freed from all course requirements, students develop their own programmes of study. They are given the opportunity to cut across traditional disciplines to integrate their own areas of interest in a manner best suited to their needs.

The full resources of the university are available to assist the students. Within Integrated Studies there are advisors to help with the integration of material, to conduct seminars on topics of interest, and to stimulate valuable interactions.

Individual students have a large measure of autonomy in their own studies and collectively provide the major input into the daily functioning of the programme itself through an Operations Council.

Although not of primary emphasis, a degree is obtainable by students at the conclusion of their studies. The Academic Board, composed of faculty within the University, arranges, upon request, for the examination of acceptable candidates to determine whether they have attained an overall baccalaureate level of competence in their areas of interest. Successful candidates are awarded the Bachelor of Independent Studies degree.

4. Field Studies Programme

Directed by a senior sociologist, the Field Studies Programme provides opportunities for students to "get into" the stuff of social relations and social organization in such ways that they are enabled

to not only test the utility of the conceptual re-organization of social reality they have learned in the classroom, but to see beyond the manifest reality.

For a year the Field Studies program has sent students as observers into the magistrates courts, has asked them to record their observations which were checked by an instructor in seminar to discuss what had been observed. Students so involved have also been given readings in the sociology of law as well as in jurisprudence, so that they might come to make their sociological concepts into working tools for raising questions about the phenomena of the social arrangements and institutional procedures that aim at dispensing a modicum of justice. In another section of the programme, students, as participant observers, work in paramedical settings, and this year similar work has begun in churches. The over-all educational goal is to reduce conceptual reification, or mechanical labelling, and instead to foster an educated but critical use of concepts and ideas from sociology and social psychology, in making sense of certain institutional arrangements such as those involved in courts, hospitals, and religious organizations.

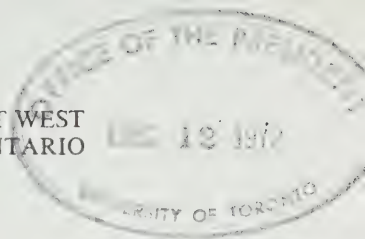
The Director of the Field Studies programme reports: "The difficulties encountered by our students, and indeed by us who are responsible for the field arrangements and seminar instruction, have made us even more concerned with the issue.

It is far more complex and problematic than we had thought, but when any of us have been able to break through the barriers set up by the organizational and professional forces we have been studying, including the barriers set up by our own labels, we have, as expected, been able to ask new questions and seen new possibilities for the more rational organization of social science education."

5. Correspondence Programme - For three years the University has offered a selection of Honours Courses to off campus students, relying heavily upon instruction via audio tape, but augmented by text books, work manuals, the criticism and marking of submitted work, and a conference of several days' duration of the students on campus. The techniques are now quite refined and the interest in the courses in Physics, Chemistry and Mathematics continues to increase as reflected both in numbers of courses offered (38) and numbers of students enrolled (over 800). The Correspondence Courses appear to meet the needs of teachers and other professional people who wish to update their knowledge.
6. Industry-oriented Graduate Studies in Engineering - It is clear that conventionally structured graduate programmes do not meet the various needs of personnel in industry. The Faculty of Engineering has now devised new formats for some graduate programmes that provide for instruction in locations both on and off campus, and in time sequences that are appropriate for industrial people.

COUNCIL OF ONTARIO UNIVERSITIES
CONSEIL DES UNIVERSITÉS DE L'ONTARIO

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December 8, 1972.

Circuletter 1104

To: Executive heads

From: Secretary

Subject: Universities' briefs to CUA

Enclosed is a copy of Form CUA-72-A which was inadvertently omitted from the University of Waterloo brief to CUA.

G. Grant Clarke.

/bsh
Encl.

Copies to: Dr. J. R. Evans
Professor D. F. Forster
Mrs. F. Ireland

LONG TERM ENROLMENT DATA 1977-1978F.T.E. ENROLMENTInstructions:

1. Please complete this report in a manner consistent with the enrolment categorization scheme and definitions reflected on the regular M.C.U. Enrolment Reports (U.A.R. Forms). Note particularly, however, the precise requirement under item (i) which is for registration in the 1st. University year subsequent to Grade 13 into undergraduate degree Programs only.
2. Reports for the University of Guelph, the University of Waterloo, and the University of Windsor should be on an F.T.E. basis.
3. For constituent Universities with Federated or Affiliated institutions, Full-Time Enrolment must take into account net teaching service performed for these Institutions, and will therefore, be stated in terms of F.T.E. for teaching services performed (Toronto, Waterloo, Western and Laurentian).

	1971 -72	1972 -73	1973 -74	1974 -75	1975- -76	1976 -77	1977 -78
(i) Full-Time "Freshman Intake" (i.e. 1st. Year Undergraduate Degree)	3,315	3,476	3,310	3,338	3,338	3,338	3,338
(ii) Total Full-Time Undergraduate (including diploma and other non-degree and make-up or qualifying year)	9,757	10,087	10,209	10,220	10,216	10,187	10,218
(iii) Total Graduate (Fall-Term)	1,124	1,155	1,092	1,115	1,154	1,178	1,194
(iv) Total Full-Time Enrolment (ii plus iii)	10,881	11,242	11,301	11,335	11,370	11,365	11,412
(v) F.T.E. of Part-Time Enrolment using Formula Conversion Factors (excluding "Summer School" Graduate Students)	602	650	807	856	903	931	964
(vi) F.T.E. Enrolment (iv plus v)	11,483	11,892	12,108	12,191	12,273	12,296	12,376
(vii) Total Basic Income Units Under Formula (i.e. Total Weighted Enrolment)	21,118	21,635	21,733	21,859	22,016	22,089	22,226

May 5, 1972.

